

WINTER 2014

PACIFIC CURRENTS

MEMBER MAGAZINE OF THE AQUARIUM OF THE PACIFIC



SEAHORSES &
SEA DRAGONS



FIELD WORK HELPS AQUARIUM STAFF BUILD KNOWLEDGE

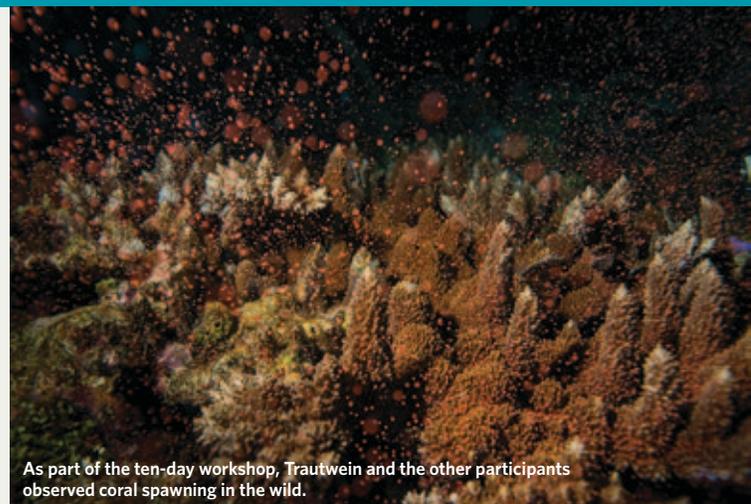
Staff members who participate in conservation projects in the field build their network in the scientific community and learn the latest methods and research.

MANY AQUARIUM STAFF MEMBERS have participated in conservation projects, from working to rehabilitate kelp forests off the coast of Orange County to planting native plants at the Los Cerritos Wetlands. Recently, Sandy Trautwein, Ph.D., curator of fishes and invertebrates, traveled to Guam to participate in a ten-day coral reproduction workshop with the Sexual Coral Reproduction Foundation (SECORE), which conducts field workshops around the world. This workshop was held in association with the University of Guam and Underwater World, an aquarium in Guam.

During the workshop, participants observed coral spawning in the wild, collected coral eggs and sperm to bring back to the lab, built a propagation system and raised coral larvae in it, and built a coral nursery that was used to outplant the newly hatched coral larvae. SECORE is securing the necessary permits to introduce the coral larvae into the wild. Underwater World also took some of the coral larvae to their facility for their coral propagation system. Participants learned how to successfully propagate both brooders and broadcasters, two kinds of corals that employ different reproductive strategies.

The knowledge of coral reproduction and hands-on experience in propagation gained at this workshop will be put into use at the Aquarium, Trautwein says. By participating in the workshop on behalf of the Aquarium, Trautwein demonstrated the institution's support of the restoration of coral reefs throughout the world, developed its connection with an international team of scientists, and helped husbandry staff members learn new ways to propagate corals in an aquarium environment.

TOP: SECORE workshop participants work with the coral propagation system they built in Guam.



As part of the ten-day workshop, Trautwein and the other participants observed coral spawning in the wild.



Trautwein participated in dives during her trip to Guam.



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PACIFIC CURRENTS is published for members of the Aquarium of the Pacific. Please send your comments to our editorial staff at pacificcurrents@lbaop.org.

OUR MISSION | To instill a sense of wonder, respect, and stewardship for the Pacific Ocean, its inhabitants, and ecosystems.

OUR VISION | To create an aquarium dedicated to conserving and building natural capital (nature and nature's services) by building social capital (the interactions between and among peoples).

PACIFIC CURRENTS STAFF | Editor/Writer: Claire Atkinson | Copy Editor: Cecile Fisher | Designer: Andrew Reitsma | Contributors: Theresa Duncan, Stacey Koupal, Nicole Malina, and Holly Piper.

AQUARIUM HOURS | Open daily from 9:00 a.m. - 6:00 p.m. except Dec. 25 and during the Grand Prix of Long Beach.

MEMBERSHIP OFFICE HOURS
8:00 a.m.-5:30 p.m. daily

PHONE NUMBERS (562 area code)
General Information.....590-3100
FAX.....951-1629
Membership.....437-FISH (3474)
Development.....951-1605
Pacific Circle.....951-5387
Lost & Found.....951-1733
Private Event Info.....951-1663
Education Programs.....951-1630
Gift Store.....951-ISEA (1732)
Advanced Ticket Sales...590-3100, ext. 0
(Note: \$2 service charge per ticket, up to \$10.)
Group Reservations.....590-3100

Cover: Leafy sea dragon
COVER IMAGE: ANDREW REITSMAN



The Aquarium of the Pacific is a non-profit 501(c)(3) institution. To provide exciting and innovative exhibits and educational programs, we rely heavily on the generous donations of individuals, foundations, and corporations.



Aquarium Founding Sponsor

LETTER FROM THE CEO

DEAR MEMBERS,

I **N JULY 2013 THE AQUARIUM** launched a new web series called **Coastal Conversations**. In these half-hour episodes, I moderate a



discussion amongst experts on various ocean and environmental topics, from oceanography and marine biology to policy and conservation leadership. The issues we discuss center on impacts to coastal regions in the United States, including the Pacific, Atlantic, and Gulf coasts, as well as the Great Lakes.

In hosting such experts, the Aquarium is furthering its vision of addressing environmental issues by bringing people together. Coastal Conversations episodes also help to educate the public about current and potential future events affecting the local coast. Episodes are broadcast on the Aquarium's website and archived for viewing at any time.

Topics of past Coastal Conversations include a look at the current state of affairs for coastal areas of the United States; the challenges coastal communities face in dealing with rising sea levels; over-fertilization by nutrients, plankton blooms, and dead zones; and enhancing the resilience of coastal communities. Guests have included Jon Dohlin, executive director of the New York Aquarium on Coney Island, which was hit by Superstorm Sandy; Tom Schmid, president of the Texas State Aquarium; Paul Sandifer, chief science advisor for the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service; Margaret Davidson, acting director of the NOAA Office of Coastal Resource Management; and Louisa Koch, NOAA director of education.

To view archived episodes of Coastal Conversations, please visit aquariumofpacific.org/aop_cc or capture the QR code below. Upcoming webcasts will be listed in the Aquarium's online event calendar. Be sure to check it out for more important discussions.

We have an exciting year ahead at the Aquarium, filled with plenty of educational opportunities, events, new animals, and more. I want to wish you all a very happy new year, and I look forward to seeing you at the Aquarium in 2014.

Thank you for your ongoing support.

Sincerely,

Jerry R. Schubel





With this new addition, there are now three giant sea bass on exhibit.

ROBIN RIEGGS



The Aquarium's lobsters molted in the fall, right on cue.

ANDREW RETSWA

JUVENILE GIANT SEA BASS ON VIEW IN HONDA BLUE CAVERN

A **JUVENILE GIANT SEA BASS** that has lived at the Aquarium behind the scenes for about a year and a half is now on exhibit in Honda Blue Cavern. Aquarists estimate the juvenile's age to be four or five years. They have not sexed the fish yet, but theorize that it is a male based on territorial behavior displayed by the other male sea bass in the exhibit since the juvenile was introduced in October. With the new addition, there is now a total of three giant sea bass in the exhibit.

Giant sea bass can grow to be more than seven feet long and weigh up to 750 pounds. They live in kelp forests and deep, rocky reefs off the coast of California, from Humboldt Bay to Baja California, Mexico.

This species of bony fish was classified as Critically Endangered by the International Union for Conservation of Nature in 1996. Populations decreased for many decades because of heavy overfishing, until the California State Legislature banned both commercial and recreational fishing for giant sea bass in 1982.

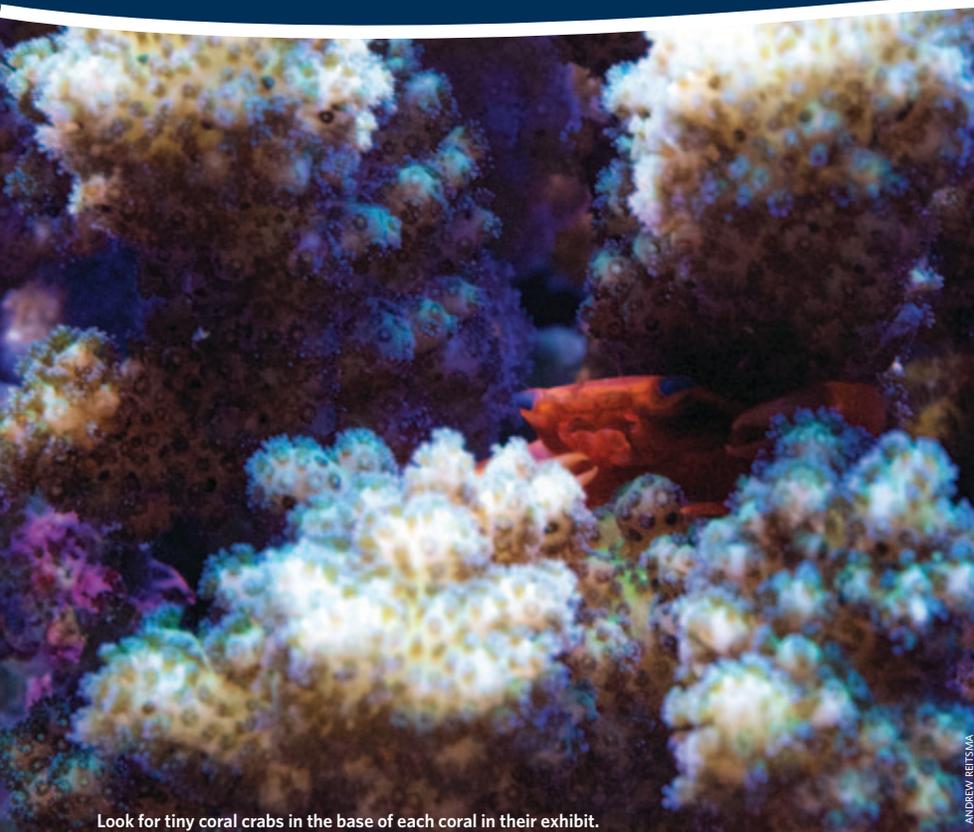
ANIMAL NEWS FROM AROUND THE AQUARIUM

A **STHEY DO EVERY YEAR, the Aquarium's California spiny lobsters molted (shed their shells) in the fall.** Aquarists are continually impressed by this phenomenon, as the lobsters receive no natural light or temperature cues as to the time of year, but they still molt at the same time each year without fail. Once a lobster molts its old shell, it takes a few days for the new one to completely harden.

A newly acquired giant Pacific octopus named Gia is now on display in the Northern Pacific gallery near the Northern Touch Lab. Also, a juvenile giant Pacific octopus is on display in the small jewel tanks near the Japanese spider crabs.

There are all-new fish in the Tropical Pacific gallery's Coral Lagoon. They replaced the exhibit's previous inhabitants, which had outgrown the space. Species now on exhibit in Coral Lagoon include Clipperton angelfish, clown triggerfish, Barrier Reef chromis, and masked rabbitfish.

Newly added golden sweeper fish are on display in the Tropical Pacific gallery in the exhibit that previously housed lionfish. Watch these fish as they swim through the most brightly lit portion of their exhibit near the center to see their iridescent coloration that gives them their name.



Look for tiny coral crabs in the base of each coral in their exhibit.

ANDREW REITSMA

CORAL CRABS ON EXHIBIT IN TROPICAL GALLERY

AN EXHIBIT FEATURING CORAL CRABS was installed in the Tropical Pacific gallery between the live coral and clownfish exhibits. Coral crabs were the focus of research conducted by Sandy Trautwein, the Aquarium's curator of fishes and invertebrates, who recently earned her Ph.D. from the University of California, Los Angeles. Trautwein discovered four new species of coral crabs during her research conducted in the field.

Coral crabs, which average less than an inch across, are found mostly in the Indo-Pacific Ocean and have a symbiotic relationship with their host corals. The crabs receive habitat, protection from predators, and a source of food from the corals. The crabs feed on mucus produced by the corals. In fact, they are so reliant on this food source that the crabs do not survive when removed from their host coral. In return, the crabs clean their host corals, removing detritus such as sediment that covers a coral after a storm. The crabs also defend their host corals from predators, like the voracious and venomous crown-of-thorns sea star, which can rapidly wipe out coral colonies. When one of these sea stars crawls onto a coral to feed, the coral crab will attack the sea star, pinching its underside and even breaking off its spines, until the sea star retreats. The crabs also provide a fertilizer for the corals, in the form of their waste.

Look for these tiny, colorful crabs hiding among the branches of their host corals in the coral crab exhibit.



This new exhibit houses abalone spawned in 2011.

ANDREW REITSMA

JUVENILE RED ABALONE ON DISPLAY IN NEW EXHIBIT

YOUNG RED ABALONE from a 2011 spawning are now on exhibit in the first-floor Southern California/Baja gallery in a small tank mounted on a pedestal. An additional spawning took place in late 2013 and resulted in several thousand abalone larvae. Aquarists hope to add more abalone to the exhibit as the animals grow larger. These efforts are part of an ongoing project in partnership with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, West Coast Region.



NEW SHARK LAGOON WEBCAM

VIEW THE AQUARIUM'S largest sharks in Shark Lagoon via a newly installed webcam. This exhibit includes several species of the ocean's top predators, including a freshwater sawfish, blacktip reef shark, sand tiger shark, zebra shark, and reticulate whiptail ray. The Shark Lagoon Cam is provided courtesy of explore.org, the philanthropic media organization and division of the Annenberg Foundation.

SEAHORSES & SEA DRAGONS

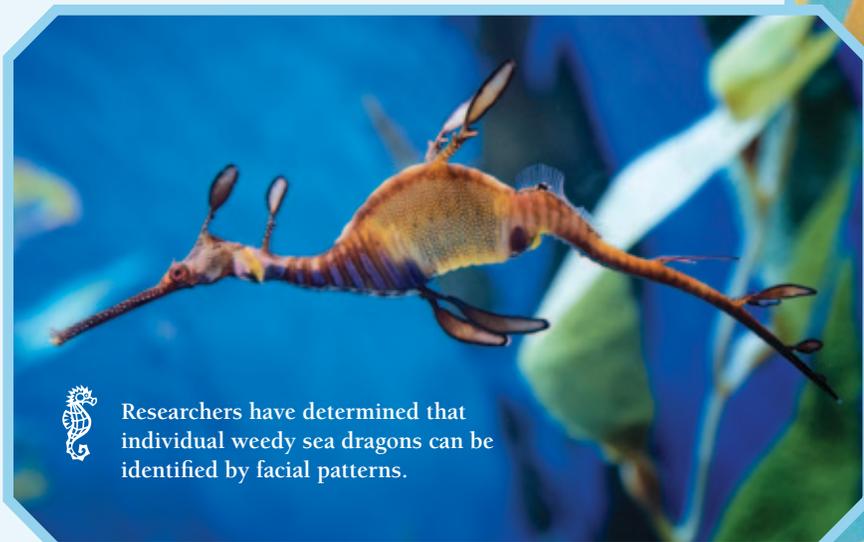
Learn about the syngnathid animal family, which includes seahorses, sea dragons, ribbonfish, and pipefish.



Pictured: Leafy sea dragon (Phycodurus eques) and pot-bellied seahorse (Hippocampus abdominalis)



A group of seahorses is called a herd.



Researchers have determined that individual weedy sea dragons can be identified by facial patterns.

Weedy Seadragon (*Phyllopteryx taeniolatus*)



Tiger tail seahorses (*Hippocampus comes*)

SEAHORSES CAPTURE OUR IMAGINATIONS. From their resemblance to horses to their lacy appendages, they are fascinating to watch. They float gracefully along the seafloor, grasping a strand of grass by their tails and occasionally capturing food with an almost imperceptible movement of their delicate snouts. When visitors to the Aquarium of the Pacific first see the seahorses' relatives, the weedy and leafy sea dragons (*Phyllopteryx taeniolatus* and *Phycodurus eques*, respectively), they are often incredulous. These fantastical creatures are unlike anything they've ever seen before. Frequently, visitors leave the Aquarium having discovered the sea dragon to be their new favorite ocean animal.

Seahorses and sea dragons, as well as pipefish and ribbonfish, are all in the family *Syngnathidae*, which contains more than 200 species. The word *Syngnathidae* comes from the Greek words *syn*, meaning fused or together, and *gnathus*, meaning jaws. All syngnathids have fused jaws, as well as other common characteristics: They have rigid bodies and swim by rapidly fluttering their fins, males incubate the eggs and eventually hatch the young, and syngnathids live in temperate and tropical waters. Seahorses tend to live between three to five years, while sea dragons typically have lifespans of five to seven years.

There are two types of sea dragons, leafy and weedy, each representing its own genus. There are about fifty species of seahorses, ranging from the pot-bellied seahorse (*Hippocampus abdominalis*), which can reach up to 12 inches in length, to the tiny Satomi's pygmy seahorse (*Hippocampus satomiae*), which reaches a maximum of a half-inch in length.

GEOGRAPHIC DISTRIBUTION AND HABITAT

Leafy and weedy sea dragons are found only in the ocean waters off the southern and western coasts of Australia. They inhabit temperate coastal waters where there are rocky reefs, sand patches, seaweed

beds, and seagrass meadows. Usually solitary, these fish move to deeper water in the Australian winter when food is scarce. In late winter they migrate to selected shallow bays, forming congregations to pair and eventually mate.

Seahorses, however, are much more widespread. They are found all over the world in tropical and temperate shallow waters. They populate mostly western Pacific waters. The Pacific seahorse (*Hippocampus ingens*) is the only seahorse found in the eastern Pacific, ranging from as far south as Peru to as far north as San Diego Bay.

PHYSICAL CHARACTERISTICS

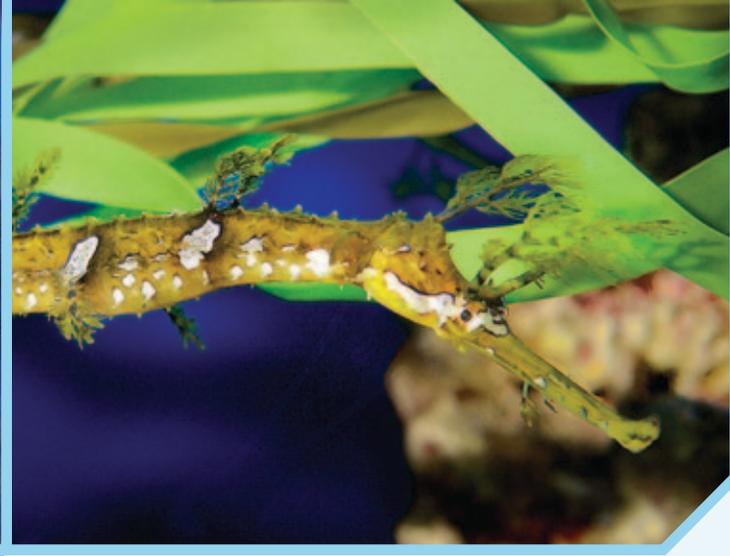
Seahorses are fish, but they are unique in that their bodies are made up of rigid bony plates. They have prehensile tails that they use to grasp and anchor themselves to seagrass or coral on the seafloor. They use dorsal and pectoral fins for locomotion. It is possible to identify an individual's gender by the shape of its abdomen. Females' abdomens curve in abruptly at the tail, forming a slight bump, whereas males' abdomens curve gently into the tail section of their bodies.



Leafy sea dragons are masters of camouflage: Neither prey nor predators recognize them as fish.

Weedy sea dragons grow to a maximum length of about 18 inches, while leafy sea dragons grow to about 14 inches. Both species have spines that are used for defense. Like seahorses, the outer skin of sea dragons is solid, limiting their mobility when fleeing from a predator. They swim through the water by rapidly oscillating their small, almost-translucent fins and using their tail as a rudder. The male weedy sea dragons can be distinguished from the females by their tails, which are thicker and brighter yellow.

Number of appendages, color, and size can vary with geographic location, depth of the water where they live, and age. In the wild, leafy sea dragons inhabiting shallow waters are yellow-brown or greenish with dark pink rib bands and green-brown pronounced leafy appendages. Those that live in deeper water are dark brown to burgundy red.



Ribboned pipefish (Haliichthys taerion)

Banded pipefish (Dunckerocampus pessuliferus)

DIET AND FEEDING

Sea dragons and seahorses do not have teeth or stomachs. Because they lack stomachs and therefore cannot store nutrients, they eat almost constantly and over wide areas, feeding on mysid shrimp and other small crustaceans, plankton, and larval fish. They use their long, thin, tubular snouts to create a strong suction with which to rapidly intake in their food. They expand a joint on the lower part of their snouts and swallow their prey whole. Special muscles in the snout can widen to accommodate different sizes of prey. They use their camouflaging abilities to ambush prey that floats nearby.

The Aquarium's aquarists have noticed that sea dragons seem to be highly visual hunters. They will sometimes reject food after looking at it closely and finding it to be frozen instead of their preferred live mysid shrimp. However, over time, they have grown used to the frozen food and will accept it, aquarists say. The Aquarium's divers are often able to collect live mysid shrimp locally. Live food is more nutritious and more enriching, because the seahorses and sea dragons have to hunt for it. Frozen food is used to ensure a steady supply when live mysid shrimp are not available.

The Aquarium's juvenile sea dragons and seahorses are fed brine shrimp, which are propagated on site. Batches of brine shrimp are hatched daily. In this case, the size (and therefore, age) of the food is determined by the size of the recipient's mouth. Twenty-four-hour-old brine shrimp are fed to the smaller syngnathids, and forty-eight-hour-old brine shrimp are fed to the slightly older and larger ones. Aquarists also culture tiny animals called rotifers to be fed to the youngest, smallest juvenile animals.

REPRODUCTION

Weedy sea dragons usually become fully grown and ready for breeding at two years old. The breeding season for weedy sea dragons is in Australia's early summer months (December and January). One brood is produced each season. Like their seahorse relatives, male sea dragons brood the eggs. However, the eggs are incubated on the underside of the tail on a brood patch instead of in a brood pouch, like that of seahorses. The female lays between 250 and 300 eggs. She deposits them in the skin of the male to be fertilized, covering most of the undersides and sides of his tail. His skin, soft at the time the eggs are first embedded, becomes hardened to form a cup around each egg to hold it securely. Each egg receives oxygen via the cup's blood-red tissue. Incubation lasts six to eight weeks. When hatching starts, the

male releases only a few eggs at a time. He may take from hours to days to release the entire brood.

Seahorses go through a similar process, with the males incubating eggs in their brood pouches for four to six weeks. At the Aquarium, aquarists report that male seahorses seem to release their young early in the morning. Seahorses form pairs that last the duration of the breeding season, but they do not mate for life, as was once previously thought.

In 2002 the Aquarium of the Pacific was the first aquarium in the world to successfully breed weedy sea dragons. Juveniles bred at the Aquarium were distributed to other aquariums and zoos across the United States. Aquarists shared the processes and methods they used with colleagues at other facilities. Successful breeding programs in protected environments can lessen collection pressure on wild animals.

Aquarists hope to breed leafy sea dragons with the recent addition of several individuals donated by another aquarium. They report seeing increased competitive behavior among the males since the introduction of the new sea dragons, which could indicate future breeding activity.

SEAHORSE AND SEA DRAGON BABIES

When they hatch, sea dragons unroll from their tight position in the egg, coming out tail first. They have a very short snout and lack appendages. Seahorses and sea dragons are independent at birth and must seek out their own food. They live off their still-attached egg yolk for about two days. This is when their snout becomes more pronounced and they are ready to start hunting. They then feed on tiny animals, or zooplankton, such as rotifers and copepods. As they get larger, they begin to hunt mysid shrimp. Baby seahorses are also pelagic, which means after birth they float around in the ocean currents along with the fields of plankton, which they eat voraciously. As they get larger, they become strong enough to propel themselves against currents and swim about independently.

Newly hatched syngnathids at the Aquarium are kept in small tanks called kreisels, which means carousel or roundabout in German. These rounded tanks are equipped with pumps that circulate the water in one direction around the circular perimeter. This movement keeps the small animals and their food in suspension, making it easier for the tiny seahorses and sea dragons to feed. The center of the kreisel is more placid, creating a resting zone.

Aquarists transfer the baby animals to larger kreisels as they grow, eventually placing them in holding tanks behind the scenes at the Aquarium before putting them on exhibit. The general criteria aquarists follow for determining if a young syngnathid is ready for exhibit include reaching a large enough size to congregate with the adults already in the exhibit, general good health, and a healthy appetite.

AT THE AQUARIUM

Aquarists currently care for three types of seahorses at the Aquarium. Pacific seahorses (*Hippocampus ingens*) can be found in the Southern California/Baja gallery on the ground floor across from the shark egg case exhibit. Pot-bellied seahorses live in the weedy and leafy sea dragon exhibits in the Tropical Pacific gallery. The pot-bellied seahorses that live in the leafy sea dragon exhibit are the offspring of parents that live in the weedy sea dragon exhibit, which also houses some grandchildren from this population. And finally, there are lined seahorses (*Hippocampus erectus*) in the exhibit between the clownfish and frogs in the Tropical Pacific gallery. The Aquarium's aquarists propagate and raise these seahorses behind the scenes. They also cultivate some of the tiny animals that the syngnathids eat.

Other syngnathids at the Aquarium include a group of yellow-banded pipefish (*Dunckerocampus pessuliferus*) recently received from another institution. Some adults are on display in the flamboyant cuttlefish exhibit in the Tropical Pacific gallery, while juveniles grow to adult size behind the scenes. Ribboned pipefish (*Haliichthys taeriophorus*) are currently living behind the scenes for breeding. This species has the straight, horizontally oriented body of a pipefish, but with the appendages and camouflaging of sea dragons.

The Aquarium has eight leafy and twenty-five weedy sea dragons. Aquarist Jen Elroy, who cares for these animals, can tell the leafy sea dragons apart. Because she feeds them between four and six times a day, checking to make sure each one is eating the proper amount, she is very familiar with each individual animal. A leafy sea dragon can be identified by the unique shape of the fin on the first appendage on the back of its head. They are also distinguishable by variations in color and markings. Aquarists have a harder time distinguishing among the weedy sea dragons, but can easily tell males from females.

The sea dragon exhibits are kept at 61 degrees Fahrenheit, mimicking the temperate waters of their native Australia. The sea dragon exhibits are the only places at the Aquarium where flash photography is prohibited because of the animals' sensitivity to changes in light. Aquarium staff members theorize that the white spots that linger after looking at a camera flash look like food to the sea dragons, which causes stress.

CONSERVATION

Both leafy and weedy sea dragons are fully protected under Australia's local, state, and federal legislation. Special licenses are required to collect or export them. These two species have been listed as Near Threatened on the IUCN Red List since 2006.

Rough seas and limited food supply can cause the sea dragon population to decrease. Compounding that vulnerability, like most coral reef inhabitants, sea dragons are at risk because of habitat destruction due to human development, pollution, and agricultural fertilizer run-off. Other threats include fishing practices that trap sea dragons as bycatch and poaching. An increase in water temperature as a result of global climate change may impact their survival if they are unable to adapt.

Seahorses face similar pressures. An additional threat to their populations is their use in traditional medicines and collection for the live aquarium trade and as curios. Although data is insufficient to measure the impact their harvest for these purposes has on overall populations, millions of seahorses are collected each year and several countries have opted out of international trade recommendations that could regulate their import and export and help protect wild populations. IUCN estimates at least a 30 percent population loss among Pacific seahorses and listed the species as vulnerable in 2006.

Right: Pot-bellied seahorse (Hippocampus abdominalis)

To help conserve syngnathid populations in the wild, construction and development in coastal areas should be limited; fisheries should be well regulated, especially in shallow-water habitats where seahorses and sea dragons live; and pollutants should be prevented from entering the ocean through run-off. Embracing ocean conservation as a whole will improve conditions for all marine life, including seahorses and sea dragons.



View a webcam streaming live from inside the weedy sea dragon exhibit. Visit aquariumofpacific.org/exhibits/tropical_pacific_gallery/webcam_weedy_sea_dragons



Lined seahorse (Hippocampus erectus)



Seahorses can move their eyes independently like a chameleon.

The Aquarium of the Pacific offers programs and events for all ages and interests. With exclusive events for our members, cultural festivals, a guest speaker series, and educational classes for families and children, there is something for everyone.

GREAT AQUARIUM ACTIVITIES!

MEMBER EVENTS

Please join us for one of these select events just for our members and their guests.

SENIOR MEMBER AFTERNOON

WED., JANUARY 29 | 2:00 p.m.-3:00 p.m.

Start your year with a special visit to the Aquarium for the next installation of Senior Member Afternoon as we dive into the underwater world of ocean exploration. Discover and learn about what creatures live beyond the reach of light, including deep-sea isopods, flashlight fish, and chambered nautilus, all of which are part of the Aquarium's newest exhibit, *Wonders of the Deep*. Members will also experience firsthand how the Aquarium is able to deliver live feeds from NOAA's *Okeanos Explorer* exploration vessel and explorer Robert Ballard's *Nautilus*. Be sure to look for your postcard invitation for more details.

COST | Free for senior members. Member guests receive 20% off general admission.

RSVP | (562) 437-FISH (3474) by January 24.

PACIFIC CIRCLE MEMBER MORNING

SATURDAY, FEBRUARY 15 | 9:30 a.m.-11:00 a.m.

We "otter"ly love our Pacific Circle members, and this special Valentine's-themed morning is sure to get your "seal" of approval. Learn firsthand from the education and husbandry staff just how much love thrives at the Aquarium, from the coupled-up Magellanic Penguins to harbor seals Shelby and Troy and their family of four. Enjoy a light continental breakfast, crafts for the kids, and a special visit by an Aquarium animal ambassador. Pacific Circle Member Morning is the perfect way to wish you a Happy Valentine's Day. This event is by invitation only. To attend, upgrade your membership today to the Pacific Circle level.

COST | By invitation only. Free for Pacific Circle members.

RSVP | (562) 951-5387 by February 12.

MEMBER EVENTS



OCTONAUTS MEMBER KIDS ACTIVITY NIGHT

FRIDAY, FEBRUARY 28 | 6:30 P.M.-9:30 P.M.

Member kids will dive into fun at Octonauts Kids Activity Night, with special guests Captain Barnacles and Kwazii. Kids can watch episodes of *The Octonauts* in the Ocean Theater, participate in Octonauts-themed crafts, check out cool dive presentations, dance to the tunes of DJ EZ, and explore the Aquarium's exhibits. Be sure to look for your invitation postcard with more information coming soon.

COST | Free for members. Member guests receive 20% off general admission.

RSVP | (562) 437-FISH (3474) by February 25.

ADULT MEMBER PENGUIN PARTY

THURSDAY, MARCH 27 | 7:00 p.m.-10:00 p.m.

Adult members are invited to celebrate the night wearing black and white at the Penguin Party. Sip on a drink from the cash bars, enjoy dancing to the live band, have your photo taken with a live penguin, watch cooking demonstrations using organic and sustainable produce, learn about the Aquarium's Magellanic Penguins during special talks in the Ocean Theater, take pictures in the photo booth using quirky props, and simply wander through the Aquarium galleries savoring the serenity of the exhibits. Be sure to look for your postcard invitation with more information on the adult member event of the year coming soon.

COST | Free for members. Member guests receive 20% off general admission.

AGES | 21+ only

RSVP | (562) 437-FISH (3474) by March 24.

MEMBER EVENTS

PACIFIC CIRCLE RECEPTION

THURSDAY, APRIL 24 | 6:15 p.m.-7:00 p.m.

Pacific Circle members are invited to an exclusive hors d'oeuvres reception in the Tropical Pacific gallery, setting the stage for the lecture immediately following in the Ocean Theater. Aquarium volunteer Ken Kurtis will discuss his experiences diving with whale sharks, which live in warm, tropical waters and represent the largest species of fish on Earth today. Kurtis is a SCUBA instructor with the National Association of Underwater Instructors, owner of Reef Seekers Dive Co. in Beverly Hills, and a dive team leader at the Aquarium of the Pacific. He has been volunteering at the Aquarium since its opening in 1998. To attend this reception and other exclusive events, upgrade your membership to the Pacific Circle level.

COST | Free for Pacific Circle members and a guest
RSVP | (562) 951-5387 by April 21



KEN KURTIS

SPECIAL EVENTS

The Aquarium of the Pacific hosts a variety of fundraisers, lunches, and other events throughout the year. Check our website for more details and additional events.

SHARK LAGOON NIGHTS

FRIDAYS, JANUARY 3 - JUNE 13, EXCEPT FEBRUARY 14 & 28, MARCH 14, & APRIL 11

Shark Lagoon is open for everyone for free after 6:00 p.m. Guests can touch and learn about sharks and enjoy live music on select nights.

COST | Free for everyone

INFO | (562) 590-3100, ext. 0

SPECIAL EVENTS
VALENTINE'S DAY LATE NIGHT
FRIDAY, FEBRUARY 14 | 6:00 p.m.-9:00 p.m.

Celebrate Valentine's Day with someone special or the whole family at the Aquarium of the Pacific. The Aquarium will be open until 9:00 p.m. on Valentine's Day and will feature a unique, one-stop Valentine's Day experience. Admission after 5:00 p.m. is just \$14.95. The Pacific Collections gift store will feature a selection of plush baby seals, polar bears, penguins, and other stuffed animals and jewelry for that perfect gift. Food and beverages will be available for purchase.

COST | \$14.95 after 5:00 p.m.
INFO | (562) 590-3100, ext. 0

NIGHT DIVE
FRIDAY, FEBRUARY 21 | 7:00 p.m.-11:00 p.m.

Take in the Aquarium at night, when the lights go down and the bubble curtain goes up in Honda Blue Cavern. In the usual Night Dive tradition, enjoy cocktails, food trucks, music from local bands, DJs spinning in the Aquarium's galleries, and works of art.

COST | \$14.95
AGES | 18+
INFO | (562) 590-3100, ext. 0

AUTISM FAMILIES NIGHT
SUNDAY, MARCH 23 | 5:00 p.m.-9:00 p.m.

Join us for a special evening at the Aquarium for families with adults or children with autism. The entire Aquarium, except Lorikeet Forest, will be open until 9:00 p.m. This will be a peaceful evening when guests can enjoy the tranquility of our exhibits and meet 11,000 animals from the world's largest ocean.

COST | \$7
INFO | (562) 590-3100, ext. 0

AQUARIUM CLOSED
FRIDAY THROUGH SUNDAY, APRIL 11-13

Please note that the Aquarium will be closed because of the Grand Prix of Long Beach street closures.

MOTHER'S DAY BRUNCH
SUNDAY, MAY 11 | 10:30 a.m.-1:00 p.m.

This Mother's Day join the Aquarium for its annual brunch celebrating moms. Attendees can delight in a decadent brunch and explore the wonders of the Pacific Ocean during their visit at the Aquarium. Visit aquariumofpacific.org/events/info/mothers_day for the brunch menu.

COST | Members: \$40/adult, \$30/child (3-11). Non-members: \$50/adult, \$40/child.
INFO | (562) 590-3100, ext. 0

FESTIVALS

To honor the rich diversity of Southern California, the Aquarium of the Pacific hosts cultural and family festivals throughout the year. Check our website for more details and additional family festivals.

FESTIVAL OF HUMAN ABILITIES
SAT. & SUN., JAN. 25-26 | 9:00 a.m.-5:00 p.m.

The Aquarium's eleventh annual Festival of Human Abilities will celebrate the creative talents and abilities of people with disabilities. Enjoy wheelchair dance, signing choirs, art demonstrations, accessible SCUBA diving demonstrations, interactive workshops, and other performances by people who have disabilities. Sign language interpreters will be present at all major shows and an audio tour is available for those who are blind.

COST | Free for members; members' guests receive 20% off regular admission
INFO | (562) 437-FISH (3474)

AFRICAN AMERICAN FESTIVAL
SAT. & SUN., FEB. 22-23 | 9:00 a.m.-5:00 p.m.

Celebrate Black History Month with jazz music, Mardi Gras dancers, interactive drum circles, art, children's crafts, storytelling, and dance performances, from hip hop to West African during this annual festival.

COST | Free for members; members' guests receive 20% off regular admission
INFO | (562) 437-FISH (3474)

NOCHE DE ESTRELLAS
FRIDAY, MARCH 14 | 6:30 p.m.-10:30 p.m.

Noche de Estrellas (Night of the Stars), the Aquarium's Latin-themed night, will feature live bands, DJs, underwater dive shows, and more. The Aquarium will remain open until 10:30 p.m., so you can dance to the sounds of cumbia, salsa, cha cha, rumba, and more. Mexican cuisine, beers, and drinks will be available for purchase.

COST | Free for members; members' guests receive 20% off regular admission
INFO | (562) 437-FISH (3474)

DIVERS DAY
SATURDAY, MARCH 22 | 9:00 a.m.-5:00 p.m.

Learn more about volunteer diving and other opportunities with dive-related organizations in Southern California. Learn about the history and recent advancements in diving. Check out educational presentations and dive demonstrations. Divers who present valid proof of certification with their photo I.D. will receive free admission.

COST | Free for members. Members' guests receive 20% off admission.
INFO | (562) 437-FISH (3474)

FESTIVALS
INTERNATIONAL CHILDREN'S DAY FESTIVAL
SAT. & SUN., APRIL 5-6 | 9:00 a.m.-5:00 p.m.

In celebration of International Children's Day, the Aquarium will showcase the talents of children of many cultures. This colorful international festival will feature music and dance performed by children representing Hispanic, Asian, African American, Pacific Islander, Native American, and other cultures. The Aquarium will also present its Young Hero Award in recognition of one young person's efforts to make this planet a better place.

COST | Free for members. Members' guests receive 20% off admission.
INFO | (562) 437-FISH (3474)



ANDREW RETSMA

EARTH DAY FESTIVAL
SAT. & SUN., APRIL 26-27 | 9:00 a.m.-5:00 p.m.

Learn what you can do to help our ocean planet at the Aquarium's annual Earth Day Festival. Join us for a weekend of family fun celebrating the Earth while learning easy, everyday tips to protect the environment. Visit booths from various Earth-friendly organizations, and participate in hands-on learning demonstrations for people of all ages.

COST | Free for members. Members' guests receive 20% off admission.
INFO | (562) 437-FISH (3474)

URBAN OCEAN FESTIVAL
SAT. & SUN., MAY 3-4 | 9:00 a.m.-5:00 p.m.

Explore and celebrate Southern California's coast during the Aquarium's annual Urban Ocean Festival. The event will include art exhibitions, a fashion show and contest for designs using recycled materials, mural painting, poetry readings, booths, and educational activities.

COST | Free for members. Members' guests receive 20% off admission.
INFO | (562) 437-FISH (3474)



February 20: Marc Weissburg



April 3: Colleen Reichmuth and Caroline Casey

GUEST SPEAKERS

The Aquarium hosts guest lectures on a variety of topics presented by experts from across the country. Lectures are held in the Ocean Theater.

LESLIE HARRIS | *The Wonderful World of Worms*

THURSDAY, JANUARY 23 | 7:00 p.m.

Marine worms comprise some of the most fascinating and bizarre underwater creatures to be found. Leslie Harris will discuss swimming green bombers, squid worms, pig butt worms, reef-building sandcastle worms, the beautiful but dangerous fire worms, fish-catching bobbit worms, deep-sea zombie worms, and more. Harris is the collections manager for the Los Angeles County Natural History Museum's polychaete (marine annelid worms) collection, which she has worked with since 1988. She is one of the founders of the Southern California Association of Marine Invertebrate Taxonomists and currently serves as the association's vice president.

DEBRA AND VINCENT CANABAL | *Plight of the Oceanic Whitetip Sharks*

THURSDAY, JANUARY 30 | 7:00 p.m.

Debra and Vincent Canabal, owners and operators of Epic Diving in the Bahamas, will share photographs of sharks and their experiences diving with these animals. They will also discuss what steps have been taken to protect oceanic whitetip sharks. The Canabals focus on conservation-minded shark tourism and photography and videography expeditions.

GUEST SPEAKERS

PAUL BARBER | *Advancing Marine Conservation in the Most Amazing Place You've Probably Never Heard Of*

WEDNESDAY, FEBRUARY 5 | 7:00 p.m.

The Coral Triangle is a region of the western Pacific that is the "Amazon of the Ocean," but is largely unknown and highly threatened. Find out more about this exotic region and its significance through a special presentation by Paul Barber in the Aquarium's Ocean Theater. Barber is a professor of ecology and evolutionary biology at UCLA, where he teaches marine science. He has been working with the Aquarium to develop a new exhibit focused on this region.

JUDITH WEIS | *Walking Sideways: The Remarkable World of Crabs*

THURSDAY, FEBRUARY 13 | 7:00 p.m.

Judith S. Weis, professor of biological sciences at Rutgers University, will discuss and sign copies of her new book, *Walking Sideways: The Remarkable World of Crabs*. She will explain their unique biology and natural history, as well as their use as food and their commercial value in the fishing and aquaculture industries. Her presentation will cover all things crab, from the recently discovered Yeti crab found in deep-sea vents to the Dungeness crabs typically seen only on dinner plates.



GUEST SPEAKERS

MARC WEISSBURG | *Whales, Windmills, Box Fish and Box Cars: What We Can Learn from the Sea and Why It Matters*

THURSDAY, FEBRUARY 20 | 7:00 p.m.

Marc Weissburg will discuss biologically inspired design, or biomimicry, which uses biological processes to fuel innovation and design in engineering solutions for a sustainable future. He studies the ecology and sensory biology of marine organisms and teaches how engineers and other problem solvers can use biological principles as sources of inspiration for solving complex challenges. Weissburg is a professor of biology at Georgia Tech and co-director of the Center for Biologically Inspired Design.

IAN MITROFF | *Fables and the Art of Leadership: Applying the Wisdom of Mister Rogers to the Workplace*

THURSDAY, FEBRUARY 27 | 7:00 p.m.

Author Ian Mitroff will discuss and sign copies of his latest book coauthored with Donna Mitroff, *Fables and the Art of Leadership: Applying the Wisdom of Mister Rogers to the Workplace*. Fred Rogers used fables and stories on his television show to help children deal with problems. Mitroff will talk about how fables can be used in the workplace to help managers deal with challenges, foster creativity, promote leadership, and manage crises. Mitroff is a professor at the Marshall Goldsmith School of Management at Alliant University in San Francisco and president of the consulting firm Comprehensive Crisis Management.



March 12: Christy Wilhelmi



February 13: Judith Weis



April 24: Ken Kurtis

GUEST SPEAKERS

CHRISTY WILHELMI | *Biointensive Methods for Small-Space Gardens*
WEDNESDAY, MARCH 12 | 7:00 p.m.

Christy Wilhelmi will discuss how to maximize the yield from a small home vegetable garden. She specializes in small-space, organic vegetable garden design and offers classes and consulting. Seventy to 80 percent of her family's produce comes from her garden of less than 200 square feet. Wilhelmi is the author of *Gardening for Geeks* and founder of Gardenerd.com, the ultimate resource for garden nerds. She will sign copies of her book after the lecture.

DANIEL FORNARI | *Submarine Volcanism and Hydrothermal Processes on the Mid-Ocean Ridge*
TUESDAY, MARCH 25 | 7:00 p.m.

The largest and most active volcanic province on Earth lies beneath the ocean along the global Mid-Ocean Ridge. Research on individual eruptions is still in its infancy. The close association of deep-sea hydrothermal vents and their chemosynthetic-based biological communities has revolutionized biological and oceanographic science, but there is much that we still do not understand about these linked phenomena. Dan Fornari will present examples of the lava formations and hydrothermal vent features that have been imaged using the latest deep-sea photographic and lighting techniques deployed on state-of-the-art vehicles. Fornari is a senior scientist in geology and geophysics at the Woods Hole Oceanographic Institution.

GUEST SPEAKERS

COLLEEN REICHMUTH & CAROLINE CASEY | *Remember the Titans: Communication and Social Learning Among Northern Elephant Seals*
THURSDAY, APRIL 3 | 7:00 p.m.

Male northern elephant seals are known for their massive size and epic battles on the beach. They establish ordered social networks during the breeding season to limit energy expenditure associated with competition. Speakers Colleen Reichmuth and Caroline Casey study elephant seals and several other kinds of marine mammals at the University of California, Santa Cruz (UCSC). Reichmuth directs the Cognition and Sensory System Program at Long Marine Laboratory at UCSC, where she has studied seals, sea lions, and sea otters for the last twenty years. Casey is a graduate student researcher. Together, they conduct field studies to examine the functional significance of the acoustic, visual, and seismic signals used by seals.

GUEST SPEAKERS

KEN KURTIS | *Gentle Jaws: Diving with Whale Sharks*
THURSDAY, APRIL 24 | 7:00 p.m.

Ken Kurtis will discuss his experiences diving with whale sharks, which live in warm, tropical waters and represent the largest species of fish on Earth today. Kurtis is a SCUBA instructor with the National Association of Underwater Instructors, owner of Reef Seekers Dive Co. in Beverly Hills, and a dive team leader at the Aquarium of the Pacific. He has been volunteering at the Aquarium since its opening in 1998.

COST | Free for members, teachers, seniors 62+, and students with valid I.D. and advanced reservations. \$5/non-members.

INFO | (562) 437-FISH (3474)

WEB | All lectures are streamed live on the Aquarium's website at aquariumofpacific.org/aquariumlive

Guest speaker sponsor:



Live Lecture Webcasts

Tune in to a live lecture webcast by visiting aquariumofpacific.org/aquariumlive or capture this QR code with your smartphone.

AQUARIUM TOURS

These programs are opportunities to see the Aquarium and its animals in a different light.

BEHIND-THE-SCENES TOURS

DAILY | *times vary*

Venture behind the scenes in this tour and go above Tropical Reef, our largest exhibit, to feed the fish! This tour provides a sneak peek into the daily operations of the Aquarium of the Pacific. Guests will enter the “wet side” of the Aquarium, a section not normally open to the public. See what it takes to maintain a world-class aquarium, from water filtration to animal care and feeding. Learn interesting facts about the Aquarium’s 11,000 animals.

COST | \$15/member | \$19/non-member; does not include Aquarium admission. Combo price: \$42.95/adult, \$39.95/senior, \$28.95/child

AGES | 7+ years

LENGTH | one hour

GROUP SIZE | maximum 10 participants

RSVP | (562) 951-1630, online, or sign up on day of visit

ANIMAL ENCOUNTERS

THURSDAYS-SUNDAYS | *see times below*

Join us for a very special experience to learn about feeding and caring for some of our marine animals. Roll up your sleeves, prepare some food, and get ready to be up close and personal for a feeding with a seal, sea lion, sea otter, shark, or penguin. There are lots of surprises along the way, so be prepared to get your hands wet! Please note that penguin encounters will go on hiatus March 27 through July 1 for the breeding season.

THURS. & FRI. | *Penguins* 8:00-10:00 a.m.

SAT. & SUN. | *Seals & Sea Lions* 9:30-11:30 a.m. | *Sharks* 12:30-2:30 p.m. | *Sea Otters* 2:45-4:45 p.m.

COST | \$99/member | \$109/non-member includes Aquarium admission

AGES | *Seals & Sea Lions, Sea Otters, Penguins:* 10+ years | *Sharks:* 13+ years

Some height restrictions apply. Participants under 16 years must be accompanied by an adult.

RSVP | (562) 951-1630



LISA BRUBAKER

This photo of moon jellies, shot by Lisa Brubaker, was the grand prize winner in the photo contest held after Photographers Night in October.

AQUARIUM TOURS

HARBOR TOUR

DAILY | *times vary*

Tour the Long Beach and Los Angeles Harbors with Harbor Breeze Cruises for a 45-minute narrated cruise around one of the most active ports in the world. See the downtown shoreline, ocean vistas, ships from around the world, and even sea lions. Tours are offered throughout the day on a daily basis. Tickets may be purchased in advance or at the ticket window upon arrival. Meet 15 minutes prior to departure at Dock 2. This program is led and staffed by Harbor Breeze Cruises.

COST | Members: \$12/adult, \$10/senior (62+), \$6/child (3-11) | Non-members: \$39.95/adult, \$34.95/senior, \$19.95/child includes Aquarium admission

RSVP | (562) 951-1630

AQUARIUM TOURS

DIVE IMMERSION

DAILY | 3:00 p.m.-5:30 p.m.

Certified divers can dive in our warm 350,000-gallon Tropical Reef Habitat with over 1,000 animals. Tour the dive program facilities, dive in the exhibit, and receive a certificate of completion, souvenir towel, use of an underwater camera, and a memory card of your photos. All equipment is provided. Requires advance reservations.

COST | \$279/member | \$299/non-member

AGES | 15+ years | ages 15-17 require participating adult chaperone

RSVP | (562) 590-3100



This photo of a bannerfish by Jeff Joseph won third place in the contest.

This giant Pacific octopus photo by Brian Knott was a runner-up in the photo contest.

AQUARIUM SLEEPOVERS

Pack your sleeping bag and toothbrush for a night of adventure at the Aquarium of the Pacific. These programs include a pizza dinner, snack, craft, cereal breakfast, and T-shirt.

BIRTHDAY PARTY SLEEPOVER

BASED ON AVAILABILITY | 5:00 p.m.-7:00 a.m.

Join us for an all-night celebration with a special birthday party sleepover featuring animal touch time, a feeding opportunity, presentations, an educator-led tour, and crafts. Please bring your own birthday cake.

COST | \$70/member | \$80/non-member

AGES | 5+ years | one adult required per 10 children

THEMES | *Sharks, Marine Mammals, or Turtles*

GROUP SIZE | 20-50 participants

RSVP | (562) 951-1630

YOUTH GROUP SLEEPOVERS

MONDAY OR WEDNESDAY EVENINGS, BASED ON AVAILABILITY | 5:00 p.m.-7:00 a.m.

Anchors aweigh as we become sailors in search of the missing treasures of the sea. Investigate the fascinating aquatic food web, and follow a treasure map in search of ocean knowledge!

COST | \$60/member | \$70/non-member

AGES | 5+ years, plus adult chaperone

GROUP SIZE | 20-60 participants

RSVP | (562) 951-1630

SPECIAL PROGRAMS

BIRTHDAY PARTIES

AVAILABLE BY RESERVATION ONLY

Let us make your child's next birthday celebration special. The Aquarium will supply all the ingredients for an unforgettable party, including a themed one-hour classroom program featuring animal touch time, biofact discovery, and a take-home souvenir craft project. The party concludes with an additional half hour in the classroom for the birthday celebration. Please bring your own birthday cake. Aquarium admission is included. All you need to do is call us at least two weeks prior to reserve a date (subject to availability), and then invite your guests. We also offer birthday sleepovers.

COST | \$33/member | \$39/non-member | 15 person minimum, includes Aquarium admission

AGES | All ages, one adult required per 10 children

THEMES | *Sharks, Marine Mammals, or Turtles*

GROUP SIZE | 15-45 participants

INFO | (562) 951-1630

AQUARIUM ON WHEELS

AVAILABLE BY RESERVATION ONLY

The Aquarium on Wheels is dedicated to developing children's appreciation for the wonders of the ocean environment. Along with an educational presentation, hands-on activities, and environmental message, our outreach educational program provides children the chance to touch sharks, sea stars, anemones, urchins, and other marine inhabitants. This mobile tidepool exhibit is not just for schools—it is also great for display at festivals, fairs, and even birthday parties. Aquarium on Wheels will deliver a memorable experience for all!

INFO | (562) 951-1630

OUTDOOR ADVENTURES

Go beyond the Aquarium to participate in offsite experiences in the great outdoors.

DOLPHIN AND SEA LIFE CRUISE

SEASONAL

The Pacific Ocean is home to many wondrous animals year 'round. Join us as we search for dolphins, seals, sea lions, and other marine life on our Dolphin and Sea Life Cruise. This is an experience you and your family will not soon forget!

COST | Members: \$25/adult, \$20/senior (ages 62+), \$15/child (ages 3-11)

Non-members (includes Aquarium admission): \$48.95/adult, \$44.95/senior, \$30.95/child

WHEN | Spring and fall season

LENGTH | 2-2.5 hours

AGES | Children under 16 must be accompanied by an adult.

RSVP | (562) 951-1630

GRAY WHALE WATCHING TRIPS

SEASONAL

Take a voyage with Harbor Breeze Cruises in search of whales as they migrate along our coastline. Learn about these gentle giants from an onboard Aquarium educator.

COST | Members: \$25/adult, \$20/senior (ages 62+), \$15/child (ages 3-11)

Non-members (includes Aquarium admission): \$48.95/adult, \$44.95/senior, \$30.95/child

AGES | Children under 16 must be accompanied by an adult.

LENGTH | 2-2.5 hours

RSVP | (562) 951-1630

YOUTH PROGRAMS

JUNIOR BIOLOGIST PROGRAM

SATURDAYS | 9:30 a.m.-11:30 a.m.
topics vary, see below

Participants will independently investigate marine life during this exploratory program. This class offers hands-on animal touch time, Aquarium animal observation, and activities relating to each topic. Select the topic that is most interesting, or take all the classes to learn about the variety of animals found at the Aquarium.

TOPIC | *Birds & Reptiles*January 11
Southern California/Baja February 8
Northern PacificMarch 8
Tropical PacificApril 19
SharksMay 10

COST | \$25/member | \$29/non-member
 (does not include Aquarium admission)

AGES | 7-12

RSVP | (562) 951-1630

JOB SHADOW

WEDNESDAYS | 3:30 p.m.-6:30 p.m.
SATURDAYS | 9:00 a.m.-12:00 noon
topics vary, see below

This program is for students who are interested in animal husbandry or marine biology careers. Students will learn what it takes to run a world-class aquarium and get a hands-on opportunity to participate in everyday activities that help maintain the Aquarium. Students will go behind the scenes, shadowing education and husbandry staff members.

TOPIC | *Penguin & Lorieet Biologist* ...Jan. 4 & 8, April 30, May 3
Veterinarian Jan. 29 & Feb. 1
Marine BiologistFeb. 26 & March 1
MammalogistApril 2 & 5

COST | \$35/member | \$39/non-member
 (does not include Aquarium admission)

AGES | Grades 7-12

RSVP | (562) 951-1630



This photo of a giant Pacific octopus by Mariah Shope received honorable mention in the photo contest.

SATURDAY FAMILY FUN PROGRAMS

Children, along with a parent or adult chaperone, will investigate the ocean world in a structured classroom program that includes interactive and hands-on activities. These programs foster the students' discovery as well as interaction with adults and peers.

SEA JELLIES AND OTHER INCREDIBLE INVERTEBRATES

SATURDAY, JANUARY 25 | 10:00 a.m.-11:30 a.m.

They may be spineless, but they are the backbone of nature. Join us as we learn all about jellies and their invertebrate relatives that inhabit the ocean.

TOTALLY TURTLES

SATURDAY, FEBRUARY 22 | 10:00 a.m.-11:30 a.m.

You may enjoy a sweet treat of Jelly Bellies, but a sea turtle prefers having a belly full of jellies! Discover fun facts and turtle trivia as we explore these reptiles.

SATURDAY FAMILY FUN PROGRAMS

SHARK SLEUTHS

SATURDAY, MARCH 22 | 10:00 a.m.-11:30 a.m.

Discover how sharks' amazing adaptations make them excellent predators. Get an up-close view of these creatures and others as we learn all about sharks!

MAGNIFICENT MARINE MAMMALS

SATURDAY, APRIL 26 | 10:00 a.m.-11:30 a.m.

Who is warm-blooded, hairy, breathes air, and lives in the ocean? Marine mammals! Join us as we learn the special ways sea otters, seals, sea lions, whales, and other marine mammals survive in the sea.

COST | ADULT-CHILD PAIR: \$36/member
 \$40/non-member
 EXTRA PERSON: \$15/member
 \$20/non-member
 (includes Aquarium admission)

AGES | 4-6 years, plus adult chaperone

RSVP | (562) 951-1630



“ We joined the Pacific Circle as part of our efforts to support stewardship of our ocean and its beautiful critters. The Aquarium helps to pass on these important values to the next generation!”

— JIM HEID AND TOBY MALINA, MEMBERS SINCE 2013



DENISE BENNETT

This photo of a long-spined urchin by Denise Bennett received honorable mention.



GARY L. LOPEZ

This shot of the giant Pacific octopus by Gary L. Lopez received honorable mention.

AQUA TOTS

Toddlers team up with their parent or chaperone for a first look into ocean life. Each of the Aqua Tots programs focuses and expands on a particular concept while encouraging adult and child interaction.

SUPER SENSES OF THE SEA

SATURDAY, FEBRUARY 15 | 10:00 a.m.-11:30 a.m.

Smell the salty air and feel the cool breeze as we use our senses to explore how ocean animals use their sight, taste, touch, and hearing in their watery home. Immerse yourself in the wonder and discovery of this interactive program.

COLORS OF THE OCEAN

SATURDAY, MARCH 15 | 10:00 a.m.-11:30 a.m.

Below the surface of the blue ocean are animals with amazing colors. Some are bright and flashy while others blend into the ocean bottom. Discover some of these colorful animals, and search for those that may be hiding.

AQUA TOTS

MOVIN' & GROOVIN' BENEATH THE SEA

SATURDAY, APRIL 19 | 10:00 a.m.-11:30 a.m.

Roll like an otter and slide like a snail as we discover animals through movement. Explore the world of sea creatures by taking a closer look at the way they move. Join us as we move and groove like the animals beneath the sea!

SLIPPERY TO PRICKLY

SATURDAY, MAY 17 | 10:00 a.m.-11:30 a.m.

Whether it's a slippery sea cucumber, soft and velvety bat ray, prickly sea urchin, or simply the smooth shell of a hermit crab, discover the many lovable and touchable creatures that live in the ocean. Learn what can be explored safely as we use our sense of touch on a journey through the Pacific Ocean.

COST | ADULT-CHILD PAIR: \$36/member, \$40/non-member
EXTRA PERSON: \$15/member, \$20/non-member
(includes Aquarium admission)

AGES | 2-3 years, plus adult chaperone
RSVP | (562) 951-1630

AQUATIC ACADEMY

COPING WITH EMOTIONALLY CHARGED PHRASES IN ENVIRONMENTAL DEBATES

APRIL 22 & 29, MAY 6 & 13 | 7:00 p.m.-9:30 p.m.

The Aquarium's Aquatic Academy is a series of four evening classes fostering dialogue on complex and pressing issues related to the ocean and environment. This spring's course, *Coping With Emotionally Charged Phrases*, will focus on terms like genetic engineering, geoengineering, ocean desalination, on- through cooling, fracking, and coastal and marine spatial planning. These phrases evoke strong emotional reactions from those who frame them as moral absolutes, sometimes inhibiting productive discussion and debate. Course participants will investigate the science behind these activities and the emotional connotations of their descriptive phrases, weighing them against each other. Why are these terms so emotionally charged? Should they be defused so they can be explored in thoughtful ways? Or is their highly charged nature protecting the public from bad unintended consequences?

COST | \$50/non-member, \$40/member, \$10 extra for CEU credit

INFO | aquariumofpacific.org

RSVP | Adina Metz, ametz@lbaop.org | 562-590-3100, ext. 0

“The Aquarium is a great place for our children to learn about the ocean and see the many different types of fish. It is like going on an underwater adventure!”

— RIKKI AND SCOTT ARATANI, MEMBERS SINCE 2011



STATE COMMITTEE MEETS AT AQUARIUM

THE CALIFORNIA ASSEMBLY SELECT COMMITTEES on Sea Level Rise and the California Economy, chaired by Assemblymember Richard Gordon, and on Ports, chaired by Assemblymember Bonnie Lowenthal, held a joint hearing at the Aquarium on October 25, 2013.

The hearing featured expert testimony on the impact of sea level rise on the state's infrastructure for transportation and trade, including ports; for water, including stormwater facilities and wastewater treatment; and for power plants. Pictured: Assemblymembers Toni Atkins, Richard Gordon, Bonnie Lowenthal, Katcho Achadjian, and Al Muratsuchi.



BEACH CLEAN-UP COLLECTS 134 POUNDS OF TRASH

AQUARIUM VOLUNTEERS Corinne Monroe and Leah Young (pictured above), who organized the 2013 California Coastal Clean-Up Day event on September 21 at Alamos Beach, hold a certificate of recognition from Assemblymember Bonnie Lowenthal presented by staff member Victoria Chung. Ninety-three volunteers collected 134 pounds of trash from the beach, preventing it from entering the ocean and impacting marine life.

Aquarium staff members organize this beach clean-up event every year in September.

SEA FARE RAISES RECORD FUNDS

THE AQUARIUM'S tenth annual Sea Fare event on October 19 raised a record-breaking \$188,000 for the institution's education, conservation, and animal care programs. With 789 in attendance, Sea Fare featured food and beverage samples from more than two dozen local restaurants and vendors, live and silent auctions, and a

Sea Fare, held in October, raises funds for the Aquarium's education, conservation, and animal care programs.

Penguin Pre-Party with artist Wyland and the Aquarium's penguin chicks. Also, four of the Aquarium's security officers built a custom guitar from former exhibit materials for Sea Fare's silent auction. For more information on this creation, visit aquariumofpacific.org/aguitar. The eleventh annual Sea Fare will be held October 18, 2014.



SCOTT SWEITZER

SCOTT SWEITZER



AQUARIUM EDUCATOR JOINS EXPEDITION AT SEA

EMILY YAM, THE AQUARIUM'S SCIENCE INTERPRETATION COORDINATOR, went on a three-week assignment this past August, aboard a research vessel named the *RV Thomas G. Thompson*. Owned by the U.S. Navy's Office of Naval Research and operated by the University of Washington, the *Thompson* is designed to take scientists on missions to explore the deep ocean. A total of fifteen engineers and scientists from the Applied Physics Laboratory and School of Oceanography at the University of Washington were assigned to the mission. Eight students were also on board to conduct research. Beginning its trip in Newport, Oregon, the *Thompson* set sail to an off-shore location 300 miles west of the Oregon coast near the Axial Seamount. The purpose of the mission was to work on the construction of a U.S. regional cabled ocean observatory that will serve researchers, students, educators, policymakers, and the public. By using this observatory to study a small portion of the ocean and tectonic plates, researchers will gather data that will further their understanding of the ocean floor. Their findings will be applied globally. All construction work was conducted aboard the *Thompson* using a remotely operated vehicle (ROV) called ROPOS.

"There is a whole other world on the seafloor that does not depend upon the sun for energy. Rather, life at that level is solely dependent upon energy from the Earth's core and mantle for survival. This experience has left me with a deeper appreciation for life and the world's natural processes," Yam said.

For the three weeks at sea most science participants, including Yam, were responsible for standing a four-hour watch. During each watch, crew members performed a multitude of tasks from recording dive data to observing the staff and the sea and helping anyone that needed assistance. Yam helped the students process bacterial experiments that were set up two years ago to study the chemistry and microbiology of hydrothermal vents, took new water samples, helped some of the students on board with their research projects, and facilitated class for students each night.

The *Thompson* expedition is part of a five-year project to install the cabled ocean observatory, which will go live this year. Footage and incoming data will be broadcast live on the Interactive Oceans website (interactiveoceans.washington.edu) and at the Aquarium's Ocean Exploration Hub.



ADRIAN SAMORA

SEA TURTLE RELEASED IN SEPTEMBER SWIMS TO BAJA

AFTER BEING REHABILITATED by the Aquarium's veterinary staff, a female olive Ridley sea turtle was released back into the ocean on September 5. When it was rescued on Venice Beach in January of last year, the stranded sea turtle was severely underweight, hypothermic, and had buoyancy problems.

When it was deemed healthy and ready for release, the turtle was fitted with a satellite tag. Data sent via satellite showed that the turtle traveled south along the California coast, arriving in Mexican waters within a few days of its release. A slideshow with map images tracking the turtle's path is online at aquariumofpacific.org/aturtletag or by capturing the QR code below.



AQUARIUMOFPACIFIC.ORG/ADOPT



AQUARIUM'S CULTURE WAVE HIGHLIGHTS FESTIVALS



THE AQUARIUM launched a new social networking community called Culture Wave. Using Facebook and Twitter, Culture Wave helps to promote the Aquarium's festivals; create a community of cultural leaders; and celebrate the diversity of the Southern California community. Culture Wave on Facebook can be found at facebook.com/TheCultureWave and on Twitter at twitter.com/theculturewave. Follow these feeds for photos, interesting facts, contests, and more.

Paper Plate Seahorse Craft

The ruffled edge of a paper plate looks a lot like the bony plates on a seahorse's body. Use the template on this page to trace your seahorse, and then decorate your seahorse to look as close to the real thing or as wild and colorful as you like. You can even make several seahorses and attach them to a string to make a seahorse garland to hang on your wall!



WHAT YOU NEED:

- Glue or glue stick
- Scissors
- Paper plate with scalloped edge
- Materials for decorating: crayons, paint, markers, glitter, stick-on eyes, and ribbon

STEPS:



1. Cut out the seahorse and fin tracers on this page.



2. Trace two seahorses and one fin onto a ruffled paper plate. Be sure to orient your seahorse so that the edge of the plate forms the seahorse's back.



3. Cut the traced shapes out.



4. Glue the straight edge of the fin to the curved side of one of the seahorses.



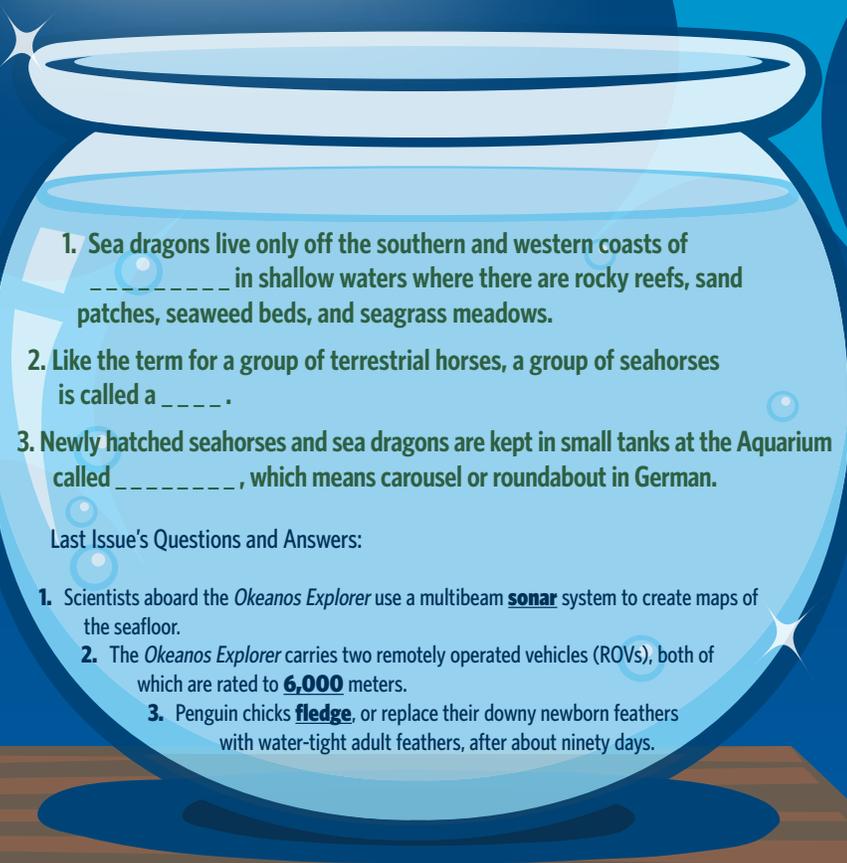
5. Glue the seahorse and fin to the other seahorse. Let your seahorse dry.



6. Finally, color and decorate your seahorse.



Fishing for **KNOWLEDGE!** ? ? ? ?



1. Sea dragons live only off the southern and western coasts of _____ in shallow waters where there are rocky reefs, sand patches, seaweed beds, and seagrass meadows.

2. Like the term for a group of terrestrial horses, a group of seahorses is called a _____.

3. Newly hatched seahorses and sea dragons are kept in small tanks at the Aquarium called _____, which means carousel or roundabout in German.

Last Issue's Questions and Answers:

1. Scientists aboard the *Okeanos Explorer* use a multibeam **sonar** system to create maps of the seafloor.
2. The *Okeanos Explorer* carries two remotely operated vehicles (ROVs), both of which are rated to **6,000** meters.
3. Penguin chicks **fledge**, or replace their downy newborn feathers with water-tight adult feathers, after about ninety days.

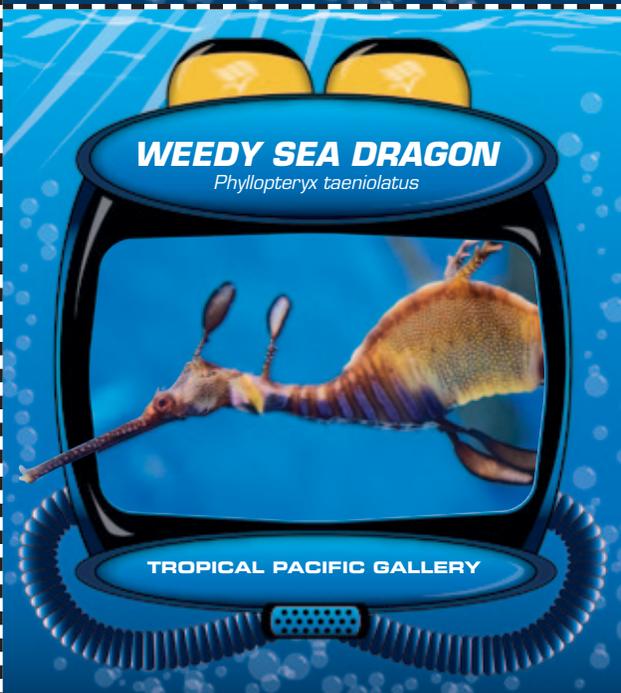


LEAFY SEA DRAGON

Phycodurus eques



TROPICAL PACIFIC GALLERY

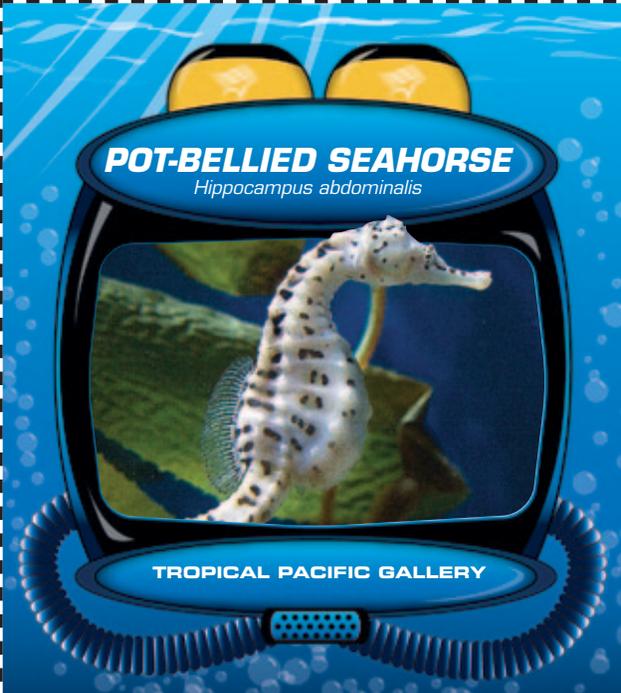


WEEDY SEA DRAGON

Phyllopteryx taeniolatus



TROPICAL PACIFIC GALLERY



POT-BELLIED SEAHORSE

Hippocampus abdominalis



TROPICAL PACIFIC GALLERY

LEAFY SEA DRAGON

Phycodurus eques



PHYSICAL CHARACTERISTICS

Leafy sea dragons do not have scales; they have hard, bony plates. Elaborate leaf-like appendages protrude from the head, body, and tail.

DIET

Lacking teeth or a stomach, leafy sea dragons eat small shrimp, crustaceans, plankton, and larval fishes, swallowing them whole.

HABITAT

Leafy sea dragons live in temperate coastal waters near the water's surface among rocky reefs, sand patches close to the reefs, seaweed beds, and seagrass meadows.

FUN FACT

Unlike seahorses, leafy sea dragons have a tail that cannot be coiled.

WEEDY SEA DRAGON

Phyllopteryx taeniolatus



PHYSICAL CHARACTERISTICS

These fish have a small head; long, thin snout; and a prehensile (grabbing) tail that is more than half their length. They can grow up to 18 inches long.

DIET

This species does not have teeth or a stomach. Weedy sea dragons eat small shrimp, crustaceans, plankton, and larval fishes, swallowing them whole.

HABITAT

Weedy sea dragons prefer shallow coastal waters of Australia where there are rocky reefs, sand patches close to the reefs, and seaweed beds

FUN FACT

The Aquarium of the Pacific was the first in the world to successfully breed weedy sea dragons.

POT-BELLIED SEAHORSE

Hippocampus abdominalis



PHYSICAL CHARACTERISTICS

This is one of the largest known seahorse species, reaching up to 14 inches long. They have large, swollen bellies and use their strong prehensile tails and oscillating dorsal fins to maneuver.

DIET

Feeding on crustaceans, such as shrimp and amphipods, the pot-bellied seahorse sucks food whole into its tube-like snout.

HABITAT

This species is often found in rocky reefs in shallow waters amongst the weeds, in harbors, and in bays. It can be found in the sea grasses of open waters as well.

FUN FACT

Unlike most seahorse species, pot-bellied seahorses are strong swimmers, sometimes swimming hundreds of yards during the course of a day.

Member Specials

HAPPY NEW YEAR!

Here are our top ten resolutions for members!

- 1 Visit the Aquarium at least once per month and discover new favorite animals and exhibits.
- 2 Watch our baby penguins and Toby, our harbor seal pup, grow before your eyes.
- 3 Attend our Guest Speakers Series and other educational programs.
- 4 Upgrade your membership or give one as a gift.
- 5 Experience an Animal Encounter, where you can feed and interact with a special animal.
- 6 Participate in one of our twenty-one annual cultural and family events.
- 7 Share your Aquarium with family and friends by bringing them as your guest.
- 8 Attend one of our fundraisers, like Sea Fare or the Blue Whale Gala.
- 9 Experience and interact with the sea life in Shark Lagoon and our many touch exhibits throughout the Aquarium.
- 10 Adopt an animal for yourself or a family member.



Don't forget: Your membership grants you free access to the Aquarium and the opportunity to take part in many of these activities for free or at a discount. By keeping your membership current, you'll be able to achieve these resolutions. Thank you for being a member. We look forward to seeing you at the Aquarium soon!



visit www.aquariumofpacific.org/membership | 562-437-FISH (3474)

BLUE WHALE Gala

SAVE THE DATE

Join us on Saturday, June 14, 2014, for our new Blue Whale Gala, as we honor environmental heroes with the prestigious Ocean Conservation Award.



This elegant black-tie event—chaired by Aquarium Trustee Michelle Molina—is taking on a new look and feel like you have never seen before. The evening's festivities will include an outdoor cocktail reception overlooking the beautiful Rainbow Harbor, a gourmet dinner under the majestic blue whale in the Great Hall of the Pacific, followed by dessert and dancing under the stars! All proceeds benefit the Aquarium's education, ocean conservation, and animal care programs.

For more information and sponsorship opportunities, please contact Linda Glasco at (562) 951-1606.

AQUARIUM OF THE PACIFIC

SAVE 20% this winter on all merchandise!

Present your membership card along with this coupon to receive an additional 10% discount in conjunction with your member discount, for a total of 20% off merchandise in our gift store.

This coupon is valid through 5/31/14 inside Aquarium gift stores. Valid as a one-time offer. Cannot be combined with any other offer. No cash value. Restrictions may apply. N-53114-A

MEMBERS-ONLY SPECIAL

ANNENBERG FOUNDATION SUPPORTS TWO PROJECTS



Charles Annenberg Weingarten (left) recently participated in the Aquarium's Dive Immersion program and interacted with visitors.

AN AQUARIUM DONOR SINCE 2000, the Annenberg Foundation made two significant gifts to the Aquarium during the second half of 2013.

The first gift of \$50,000 went to the Ocean Science Education Program, which introduces students and teachers to the wonders of the ocean and stimulates interest in science and the environment. The second gift of \$250,000 is designated to the upcoming southern steelhead exhibit. A unique fish species, steelhead once called the Los Angeles River watershed home; however, habitat loss and other human-caused impacts have severely reduced the wild population. Scheduled to open this spring, the exhibit will showcase these animals, explore the steelhead story, and educate visitors on taking a more active role in protecting the environment.

As one of the principal sponsors of the steelhead exhibit, along with its support of the Aquarium's educational programming, the Annenberg Foundation is providing impactful programs and services to the Los Angeles community. Supporting hundreds of nonprofit organizations around the world, the Annenberg Foundation focuses its efforts on advancing public well-being through improved communication and innovative approaches to sharing ideas and knowledge.

Aquarium Offers Gray Whale Expedition in Baja California

GRAY WHALES migrate 11,000 miles one-way every winter, from the Arctic waters of North America, to mate and calve their young in the protected lagoons and bays of Baja California

Sur. In these lagoons, the whales spend time breeding, calving, and nursing their calves to prepare them for the 11,000-mile return to their feeding grounds in the north.

The Aquarium of the Pacific and Baja Expeditions are partnering to provide a luxury-style camping experience at the remote Laguna San Ignacio. Twice-daily excursions to the whale viewing area will be offered along with meals and an educational presentation every evening. The expedition includes a tour of the Caracol Science Museum and Aquarium of Ensenada. Additional wildlife experiences include bird watching, mangrove kayaking, and desert plant and wetland walks. The cost is \$3,100 per person. For more information, call (562) 951-1613.

FUNDRAISING HIGHLIGHTS

The Aquarium of the Pacific relies on individuals, corporations, foundations, and government partners to support its mission and vision with contributions to the operating budget and to a diverse range of projects.

■ HCP Sponsors Senior Day

The Aquarium held its popular annual Senior Day event offering free admission for those over the age of fifty this past September. HCP, Inc., a real estate investment trust serving the healthcare industry, provided a \$25,000 sponsorship that helped create a successful event with over 6,268 in attendance. HCP employees also donated their time by volunteering throughout the day, staffing booths and aiding Aquarium staff members.

■ Earl B. and Loraine H. Miller Foundation Supports Ocean Science Education

Recently the Aquarium received a \$50,000 pledge for the Ocean Science Education Program from the Earl B. and Loraine H. Miller Foundation. An Aquarium partner for many years, the Miller Foundation has supported multiple educational initiatives and Aquarium projects, including AquariumLIVE at Miller Children's Hospital. A program designed for hospitalized children and funded by the Miller Foundation, AquariumLIVE helps young patients explore marine biology and the Pacific Ocean via videoconferencing technology.

■ John W. Carson Foundation, Inc. Commemorates TV Host's Love of Animals

The Aquarium received a \$25,000 gift from the John W. Carson Foundation, Inc. this past September. An animal lover who frequently featured zoologists and exotic species on his late night TV show, Johnny Carson visited the Aquarium in its early years. The funds will go toward the expansion of the Aquarium, allowing more visitors to enjoy the animal ambassadors Carson loved.

■ Roddenberry Foundation Supports the Sciences

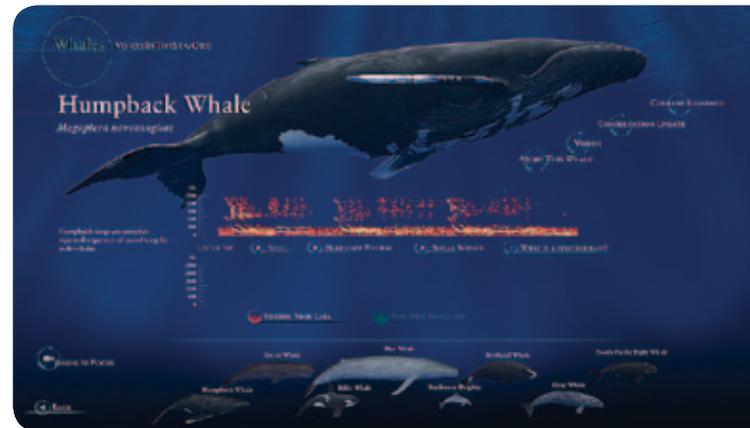
The Roddenberry Foundation made a grant of \$150,000 to support both the Ocean Science Education Program and the Aquarium Scholarship Fund. These funds will aid the Aquarium in bringing the wonders of the ocean to thousands of students throughout Southern California in the 2013 and 2014 school year.

■ Windsong Trust Introduces the Underserved to the Pacific Ocean

The Windsong Trust renewed its support of the Aquarium with a grant of \$150,000 for the Ocean Science Education Program and Aquarium Scholarship Fund.

■ Kenneth T. and Eileen L. Norris Foundation Renews its Gift

The Norris Foundation renewed its annual gift of \$30,000 to the Ocean Science Education Program in October. A long-time neighbor and friend of the Aquarium, the Norris Foundation has supported educational initiatives since the Aquarium opened in 1998—over fifteen consecutive years. The latest gift will aid the Aquarium in expanding its educational programming in the coming year.



Visitors to the Aquarium can learn more about several whale species, hear their sounds, and view video clips with the newly redesigned *Whales: Voices in the Sea* exhibit.

■ Pacific Life Supports Exhibit Update

The Pacific Life Foundation, founding sponsor of *Whales: Voices in the Sea* since 2003, has made a gift of \$156,000 to support a comprehensive update to the exhibit and the installation of the exhibit in two more aquariums, the Texas State Aquarium and the Florida Aquarium. An interactive kiosk and exhibit, *Voices in the Sea* plays the various calls of humpback, northern right, blue whales, and other species and introduces audiences to conservation initiatives and key scientists through recorded interviews. The update was a collaboration between the foundation, the Aquarium of the Pacific, and Scripps Institution of Oceanography at the University of California, San Diego.

AQUARIUM ACCOLADES

HERITAGE AWARDS



Georgiana Valoyce Sanchez | Moompetam Native American Festival

Georgiana Valoyce Sanchez is a member of the

Chumash and O'odham (Tohono and Akimal) tribes. She currently serves as the elder representative on the Governing Council of the Barbareno Chumash Council and the chair of the Chumash Elders Women's Council of the Wishtoyo Foundation. She has taught for the American Indian Studies Program at California State University, Long Beach, for over twenty-seven years. She is a renowned storyteller and board member of the California Indian Storytellers Association and co-founder of Living Indigenous Voices. Along with members of her family, Sanchez is a regular participant in the Aquarium's Moompetam festival, with the Chumash Family Singers and Chumash Family Storytellers. She continues to be a dedicated advocate for the preservation of indigenous languages, sacred sites, ceremonial practices, and traditional arts.

Pictured: Peter Martineau, senior marketing coordinator, Aquarium of the Pacific; Georgiana Valoyce Sanchez, Heritage Award honoree, and Barbara Long, vice president of government relations and special projects, Aquarium of the Pacific.



Mujeres de la Tierra | Baja Splash

Mujeres de la Tierra is a non-traditional environmental non-profit organization in Los Angeles. It teaches women and their families to take ownership of neighborhood issues

and become advocates for sustainable communities and the environment. Its goals include organizing women and families in traditionally excluded areas, building healthy and sustainable neighborhoods through public engagement and individual participation, identifying practical approaches to solving local environmental issues by balancing environmental needs with the needs of local families, and developing community engagement models that can be replicated in other neighborhoods.

Pictured: Irma Muñoz, president and CEO, Mujeres de la Tierra.



Jiang Khay Cha | Southeast Asia Day

Jiang Khay Cha is a master artist who grew up in Sayaboury, Laos. Cha Khay, as he is known in the local Hmong community, worked

to build understanding between the ethnic communities in Laos by learning multiple languages and the cultural arts. He speaks five languages of his region, including Hmong, Lao, Thai, Khmer, and French, as well as some English. From a young age, Cha Khay was drawn to the Lao flute and Hmong drumming, an ancient art form that builds physical and spiritual strength. The Hmong Association of Long Beach established its Qeej Not Gangs Cultural Arts Program in 1998 and recruited Cha Khay to teach traditional cultural arts to young students in the program. They perform regularly at Hmong festivals, combining traditional dance and music. Cha Khay is deeply respected in the local community and on a national level as a culture bearer, wise elder, and leader for the communities of Laos.

Pictured: Perry Hampton, vice president of husbandry, Aquarium of the Pacific, and Jiang Khay Cha, Heritage Award honoree.



Pacific Asia Museum | Autumn Festival

The Pacific Asia Museum is dedicated to the arts and culture of Asia and the Pacific Islands. Housed in a 1920s Chinese-style building in the heart of

Pasadena, this intimate museum features art from across Asia and the Pacific Islands. Exhibitions range from the traditional to the contemporary and are complemented by a variety of lectures, workshops, and family events. Community engagement is central to the Pacific Asia Museum's mission. Every year, the Pacific Asia Museum welcomes thousands of students and families free of charge to their school tours, Free Family Festivals, Lunar New Year Festival, and more to learn about the art and culture of Asia and the Pacific Islands.

Pictured: David Bader, director of education, Aquarium of the Pacific, and Margaret Leong Checca, interim executive director, Pacific Asia Museum.

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THE AQUARIUM OF THE PACIFIC is proud to recognize its leading society of supporters—the Pacific Circle. These committed individuals and corporations provide critical support for the Aquarium's annual operations and mission-driven programs. The Aquarium sends its sincerest thanks to each Pacific Circle member in appreciation of his or her inspiring dedication and generosity. This listing does not include donations to our Ocean Science Education Program, Scholarship Fund, Ocean Conservation Awards Gala, Capital Campaign, and other special projects.

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GO GREEN BY RECYCLING ELECTRONIC WASTE

Help reduce greenhouse gas emissions and prevent pollutants from entering the environment or threatening human health by recycling electronics.

A S CONSUMERS purchase new TVs, computers, and cell phones, the older models need to be disposed of properly. Electronic waste (e-waste) comprises about 2 percent of the trash we dispose of in the United States—more than 2 million tons per year, according to the U.S. Environmental Protection Agency (EPA). This segment of the U.S. waste stream is growing at a rate of about 25 percent or more every year.

E-waste includes cell phones, radios, alarm clocks, hair dryers, computers, televisions, VCRs, stereos, microwaves, fax machines, printers, scanners, keyboards and other computer peripherals, and other electronics. These appliances and devices contain valuable materials like copper and engineered plastics that can either be recycled or reused, as well as toxic materials, like lead, nickel, cadmium, and mercury that can do serious damage to human health and the environment if disposed of improperly.



Aquarium visitors can recycle e-waste at the Aquarium's annual Earth Day Festival, held this year on Saturday and Sunday, April 26-27.

For every million cell phones that are recycled, 35,000 pounds of copper, 772 pounds of silver, 75 pounds of gold, and 33 pounds of palladium can be recovered, according to the EPA.

The EPA estimates that about a quarter of the e-waste disposed of each year is collected for recycling and either reused or refurbished or dismantled for materials recovery. The agency strongly supports keeping e-waste out of landfills to recover materials and reduce the environmental impacts and energy demands from mining and manufacturing. Recycling e-waste helps to reduce greenhouse gas emissions, reduce pollution, save energy, and save resources by extracting fewer raw materials from the Earth.

Electronics that still work can be donated for reuse. Broken or outdated items that cannot be repaired or would pose too high a cost to upgrade can be recycled. Many electronics manufacturers and retailers offer recycling programs. To search these companies, visit epa.gov/epawaste/conserves/materials/recycling/donate.htm. To find a location in your county that accepts e-waste for recycling, visit calrecycle.ca.gov/electronics/collection/.

The e-waste problem can also be addressed by buying "green." Look for electronics that contain fewer toxic materials, are made out of recycled materials, are designed for easy upgrading or disassembly, and offer leasing or takeback options. The EPA recommends a comparison shopping tool, the Electronic Product Environmental Assessment Tool (EPEAT), that can be used to find desktop computers, monitors, and notebooks that meet certain requirements. To search for these electronics, visit epeat.net.

The Aquarium collects e-waste for proper disposal each year at its annual Earth Day Festival in April. Each visitor who brings an e-waste item receives \$10 off Aquarium admission to the festival. Help do your part to reduce the amount of waste in landfills, greenhouse gas emissions, and energy consumption by recycling your e-waste this year.

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*Aren't you dyin'
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sea lion?*

Adopt at our \$50 level or above between now
and February 10, and you'll be entered for an
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this Valentine's Day!*

Starting at just \$50, your adoption will include an official certificate, beautiful color photo, and plush animal of your adopted species. Additional levels of adoption feature special benefits, including complimentary Aquarium admission tickets, Behind-the-Scenes Tours, and Animal Encounters. Adopt an Animal sponsorships are fully tax deductible and include free shipping.



To learn more about the Adopt an Animal program or to sponsor an animal, visit aquariumofpacific.org/adopt, call 562-437-FISH (3474), or stop by the information desk on your next visit!